

SUPPLEMENTARY BOX 2. Sexual behavior and transmission parameters used in “Modeling the impact of sexual networks in the transmission of *Monkeypox virus* between gay, bisexual, and other men who have sex with men”

Parameter	Value	Notes/Source
Steady state percentage of main and casual partners		†,§,¶
0 Main, 0 Casual	47.1	
0 Main, 1 Casual	16.7	
0 Main, 2 Casual	7.4	
1 Main, 0 Casual	22.0	
1 Main, 1 Casual	4.7	
1 Main, 2 Casual	2.1	
Expected daily probability of having a one-time sexual contact based on number of main and casual partners*		†,§,¶
0 Main, 0 Casual	0.0092	
0 Main, 1 Casual	0.0124	
0 Main, 2 Casual	0.0122	
0 Main, 2 Casual	0.008	
1 Main, 0 Casual	0.0079	
1 Main, 1 Casual	0.0079	
1 Main, 2 Casual		
Expected daily probability of having a one-time sexual partner based on sexual activity stratum*		†,§,¶
1	0	
2	0.001	
3	0.0054	
4	0.0101	
5	0.0315	
6	0.286	
Average partnership duration		†,§,¶
Main	477 days	
Casual	166 days	
Daily probability of sexual contact by partnership type		†,§,¶
Main	0.22	
Casual	0.14	
One-time	1.0	
Modeled population size	10,000	Assumption
Initial number of infected individuals in MSM population	10	Assumption
Duration of incubation period	7.6 days	**
Time from becoming infectious to seeking medical treatment among those who may ever seek care	8 days	Outbreak response data
Probability of ever seeking medical care	60%	Assumption; variation did not substantially affect results.
Probability of Infection per sexual contact	(0.6–0.9)	Assumed values to yield relative low and high final percent infected.
Duration of Infectious period	27 days	Assumption; consistent with assumptions of other works.
Sexual role		†,§,¶
Exclusive insertive	24.2%	
Exclusively receptive	32.1%	
Versatile	43.7%	

*Daily probability of forming a one-time partnership is determined both by enduring partnership status (main, and casual) and also sexual activity stratum.

[†] Weiss KM, Goodreau SM, Morris M, et al. Egocentric sexual networks of men who have sex with men in the United States: Results from the ARTnet study. *Epidemics* 2020;30:100386.

[§] Jenness SM, Goodreau SM, Rosenberg E, et al. Impact of the Centers for Disease Control's HIV preexposure prophylaxis guidelines for men who have sex with men in the United States. *J Infect Dis* 2016;214:1800–7. <https://academic.oup.com/jid/article/214/12/1800/2632613>

[¶] Hernández-Romieu AC, Sullivan PS, Rothenberg R, et al. Heterogeneity of HIV prevalence among the sexual networks of Black and White MSM in Atlanta: illuminating a mechanism for increased HIV risk for young Black MSM. *Sex Transm Dis* 2015;42:505.

** Charniga K, Masters NB, Slayton RB, et al. Estimating the incubation period of monkeypox virus during the 2022 multi-national outbreak. *medRxiv* [Internet]. 2022.06.22.22276713. Available from: <https://www.medrxiv.org/content/10.1101/2022.06.22.22276713v1>